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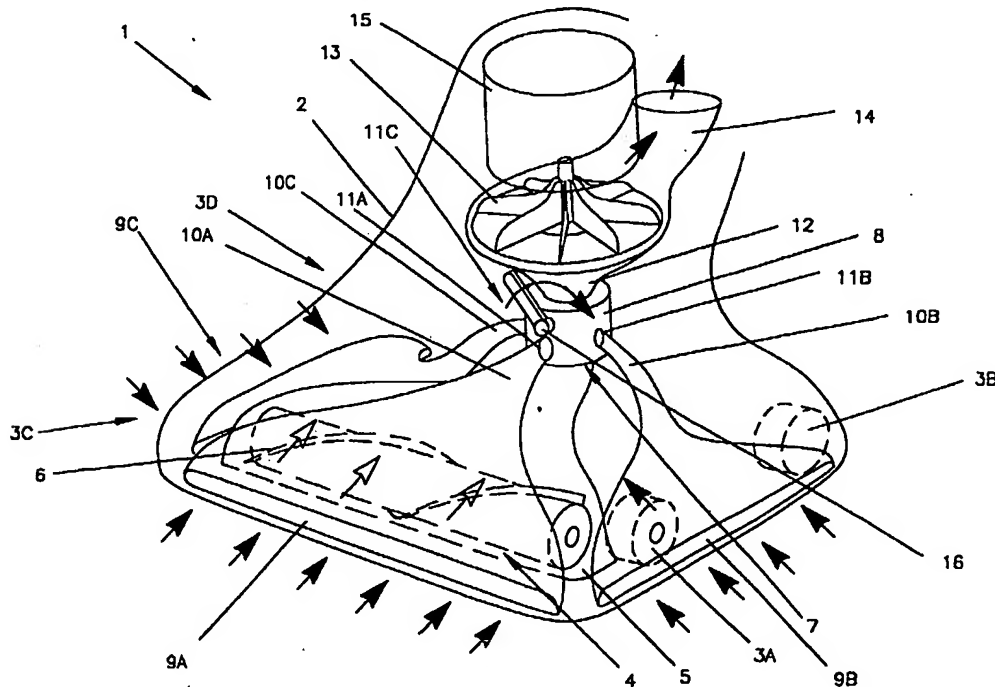
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(56) Documents Cited  
EP 0285096 A2 US 4023234 A  
US 3942219 A US 3936903 A

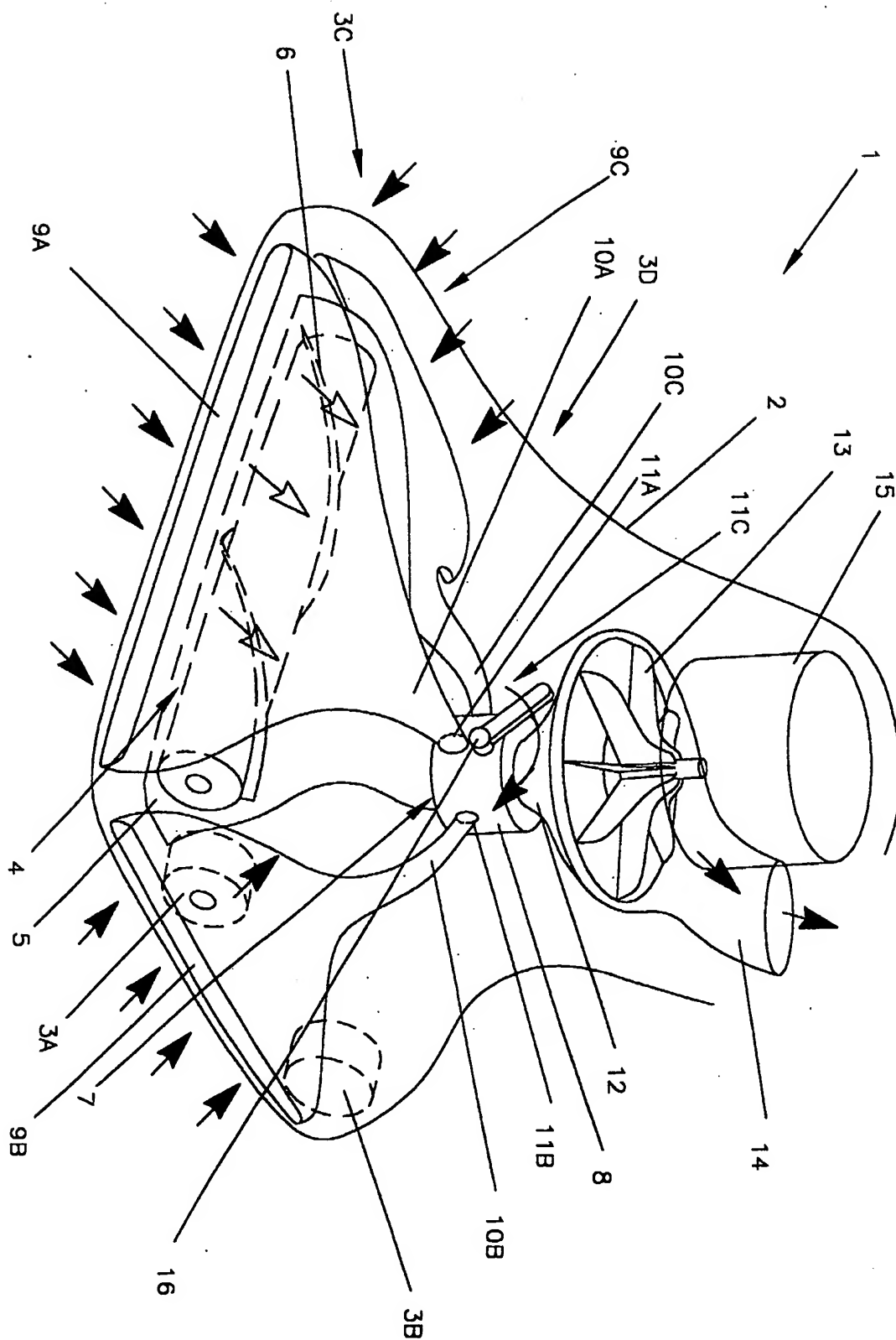
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(54) Abstract Title  
**Vacuum cleaner with edge suction**

(57) The cleaning head of a vacuum cleaner is provided with suction ducts at the edges, so that dust and dirt can be cleaned right up to the edge of walls etc of an area being cleaned, and is provided with a control valve so that either the said edge ducts or the main floor suction nozzle can be connected to the vacuum source. In the embodiment the main body or head 2 has a floor aperture 4 through which dirt is removed from the floor and this has the usual roller 6. Air sucked in here is ducted via housing 5 to the first inlet port of a control valve 8. Also provided are lateral inlets 9A, 9B, 9C which communicate with internal guide channels 10A, 10B and 10C which terminate at inlet ports 11A, 11B and 11C of the valve 8. Operation of the valve e.g. by lever 16 causes airflow from either the inlets 9A-9C or from the floor aperture 4.



The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.



Title: Improvements To Vacuum Cleaners

The present invention relates to improvements to vacuum cleaners.

When using a vacuum cleaner to clean the floor of a room, the head is often unable to clean the very edge of the room adjacent the skirting board. A reason for this is that the aperture through which dirt is transported in the cleaning head has its perimeter surrounded by the thickness of the head body. Also some cleaning heads include a roller brush and again this is surrounded by the thickness of the head body.

The invention seeks to provided a solution to this problem.

According to the present invention there is provided a vacuum cleaner comprising:

- a) a vacuum cleaner body having a floor aperture through which dirt is transported, and at least one side aperture in the body,
- b) a vacuum chamber, and
- c) a control valve to connect said floor aperture to the vacuum chamber and/or the or each side aperture to the vacuum chamber.

The vacuum body may form part of an upright vacuum cleaner and a rotating brush may be provided adjacent the floor aperture.

Alternatively the vacuum body may be formed as a head at the end of a conduit remote from the vacuum chamber.

The or each side aperture may be formed facing the floor or may be on the side of the body.

An embodiment of the invention will now be described with reference to the accompanying drawing showing a perspective view.

Referring to the drawing there is shown the lower part of an upright vacuum cleaner 1. Vacuum cleaner 1 has a floor body 2 supported off the floor by four rollers 3A,3B,3C,3D (3C,3D not shown) so that it can be wheeled along the floor.

Body 2 has a floor aperture 4 in a housing 5 through which dirt is transported from the floor. Contained in the housing 5 is a roller 6 driven by a motor (not shown). The end of housing 5 remote from aperture 4 is connected to the first inlet port 7 of a two way control valve 8.

Three side apertures are provided in the front and side walls of body 2 in the form of slits 9A,9B,9C. Internal guide channels 10A,10B,10C connect the apertures 9A,9B,9C to three second inlet ports 11A,11B,11C of two way control valve 8.

The outlet 12 of control valve 8 is connected to a vacuum fan 13 in a fan housing 14. Fan 13 is driven by motor 15. The output of housing connects to a dirt collecting chamber and handle above the body 2 (not shown but well known in the art).

Control valve 8 includes a manual selector handle 16 which selectively connects either the floor aperture 4 to the dirt collecting chamber or the slits 9A,9B,9C to the dirt collecting chamber.

In use the vacuum cleaner is turned on with the floor aperture 4 connected to the dirt collecting chamber, and the floor can be cleaned as if the vacuum cleaner 1 is similar to a known upright cleaner. If the edges of the floor such as the skirting board needs cleaning, the control valve is used to connect the slits 9A,9B,9C to the dirt collecting chamber, whereupon dirt is sucked in from the sides.

The invention may take a form different to that specifically described above. For example less or more than three apertures could be provided in the body, e.g. two side apertures. The apertures could be other than slits, e.g. round apertures. The control valve could connect the side apertures and floor aperture to the vacuum chamber at the same time. The side apertures could face the floor instead of facing outwards from the side of the body.

Instead of the vacuum body being part of an upright vacuum cleaner it could be the vacuum head mounted at the end of a conduit remote from the vacuum chamber.

It is also envisaged that the control valve could be controlled by means other than a manual handle. For example the control valve could be operated electrically, e.g. from a switch adjacent the handle of a vacuum cleaner. Alternatively a foot pedal could be used.

Also single roller 6 in the housing 5 could be replaced with twin rollers for more effective cleaning.

Further modifications will be apparent to those skilled in the art without departing from the scope of the present invention.

# THE CLAIM 5.

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The vacuum body may form part of an upright vacuum cleaner and a rotating brush may be provided adjacent the floor aperture.

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The or each side aperture may be formed facing the floor or may be on the side of the body.





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INVESTOR IN PEOPLE

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Claims searched: The claim

Examiner: John Wilson  
Date of search: 8 November 2002

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): A4F

Int Cl (Ed.7): A47L 9/02 9/04 9/06

Other: Online: WPI, EPODOC, PAJ

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
A	EP 0285096 A2      Matsushita	'The claim'
X	US 4023234      Martinec et al - whole document - note figs. 4, 5 10, 12 and column 4 lines 30-34 & 50-60	'The claim'
X	US 3942219      Johnson - whole document - note figs. 1 & 2 and column 3 lines 1-25	'The claim'
X	US 3936903      Johnson - whole document - note figs. 1, 2A 4 and column 2 lines 24-30, column 3 lines 53-56, and column 4 lines 1-4	'The claim'

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.